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AUTHOR	Simmons, Deborah C.; Kame'enui, Edward J.; Good, Roland H., III; Harn, Beth A.; Cole, Carl; Braun, Drew
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ABSTRACT

Syntheses of reading research conducted by the National Research Council (1998) and more recently by the Congressionally-Commissioned National Reading Panel (2000) provide ample evidence of the skills, experience, and knowledge children need to become successful readers in an alphabetic writing system. This research makes clear that children must develop and demonstrate proficiency in the "big ideas" (Kame'enui and Simmons, 1998) of phonemic awareness, alphabetic understanding, and automaticity with the code. This monograph examines the intricacies of teaching beginning reading in schools, describes a prevention model of schoolwide reading improvement, and profiles the lessons learned from implementing the model in a suburban school district. The monograph's model can help guide schools' selection, implementation, and sustainability of practices and programs that fit their unique host environments and hold to the standard of research-based practice. The monograph contends that although the goal that all children read by Grade 3 is ambitious, for administrators and teachers in schools across the nation and for the well being of children it is non-negotiable. (Contains 15 figures and 27 references.) (NKA)

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Building, Implementing, & Sustaining a Beginning Reading Model

School by School and Lessons Learned

Deborah C. Simmons
Edward J. Kame'enui
Roland H. Good III
Beth A. Harn
Carl Cole
Drew Braun

INSTITUTE FOR THE DEVELOPMENT OF EDUCATIONAL ACHIEVEMENT
COLLEGE OF EDUCATION · UNIVERSITY OF OREGON AND BETHEL SCHOOL DISTRICT

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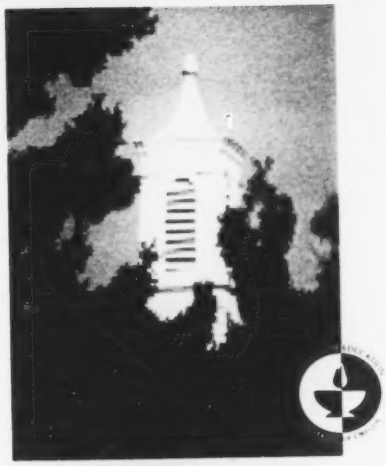

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217 Education Building
1571 Alder Street
College of Education
1215 University of Oregon
Eugene OR 97403-1215

(541) 346-1397

Fax (541) 346-5818

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Building, Implementing, & Sustaining a Beginning Reading Model:

School by School and Lessons Learned

Introduction

The goal that all children will read at or above grade level by the end of grade 3 appears closer to reality than at any point in educational history. The scientific knowledge base of the causes and correlates of reading difficulty and reading success has never been more mature or onvergent. Syntheses of reading research conducted by the National Research Council (1998) and more recently by the Congressionally commissioned National Reading Panel (2000) provide ample and compelling evidence of the skills, experience, and knowledge children need to become successful readers in our alphabetic writing system. This research makes clear that children must develop and demonstrate proficiency in the "big ideas" (see Kame'enui & Simmons, 1998) of phonemic awareness, alphabetic understanding, and automaticity with the code. Equally important is the scientific evidence that early reading proficiency is best developed through early, systematic, explicit instruction (National Reading Panel, 2000). Less understood is how to translate this scientific knowledge of early reading into the schools and classrooms charged with the monumental task of teaching all children to read.

An estimated twenty percent of students will encounter serious reading difficulty or reading disability (Lyon, 1997); another twenty percent will have reading difficulties so severe as to hinder their enjoyment of reading (Grossen, 1997). The magnitude of reading difficulties among America's children compels us to rethink our system of reading education. Knowledge of effective, research-based practice is necessary but insufficient. The goal must, therefore, be to increase the probability that research-based effective practices find their way into schools, are implemented at sufficient levels to effect significant improvement, and are sustained over time. Achieving this goal requires that we identify the ingredients or components in schools that interact with the scientific knowledge base of beginning reading to create an affective, efficient model of reading for the full range of learners. In this monograph, we examine the intricacies of teaching beginning reading in schools, describe a prevention model of schoolwide reading improvement, and profile the lessons learned from implementing the model in a suburban school district.

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Building, Implementing, & Sustaining a Beginning Reading Model:
School by School and Lessons Learned

The Intricacies of the Educational System: The School

Schools are complex educational environments that are made even more complex by social, political, economic, pedagogical, legal, cultural, demographic, and historical forces of the times. Although some of these forces are dynamic (e.g., cultural, social) and others coercive (e.g., legal, economic), they unwittingly shape the very nature and function of schools. Of course, as complex environments, schools come in all sizes, and the cultural, linguistic, and developmental variation of the student populations that occupy each of the more than 85,000 public elementary and secondary schools in the United States (U.S. Department of Education, 1995) is also great. Given this complexity and diversity, schools have a formidable responsibility to improve the academic and social outcomes of students, especially those students who are at serious academic risk and are clearly the biggest challenges for public schools every day of the school week. In addressing this challenge, it is imperative to identify those factors that matter most.

Does Size and Place Matter to Sustaining Effective Educational Practice?

In many cases, size and location of a school matters. Not surprisingly, large, urban schools are likely to have more complicated administration and organization than small, rural schools. For example, Los Angeles Unified School District (LAUSD) is the second largest school district in the country and has 420 elementary schools, 72 middle schools, 49 high schools, an enrollment of 697,143 students who speak more than 88 different languages and dialects, a certified staff of more than 41,000, and a total district budget of $6.5 billion. In fact, the budget for the LAUSD is bigger than the state budgets of, for example, Alaska, Colorado, Delaware, Hawaii, New Hampshire, or Wyoming.

In contrast to the LAUSD is Bethel School District (BSD) in Eugene, Oregon. Bethel has 6 elementary schools, 2 middle schools, and 1 high school, with a total enrollment of 5,246, a certified staff of 272, and a total district budget of $30 million. The numerical differences between these districts are staggering. LAUSD has 70 times more schools, 133 times more students, 150 times more certified staff, and a budget 220 times greater than BSD. In light of these manifest quantitative differences in the administrative and fiscal profiles of the Los Angeles and Bethel school districts, it would be reasonable to pose several questions about what these differences mean for instruction. For example:

1. Should the classroom instructional practices and interventions be very different in design, scale, and impact for schools in large school districts from those in small school districts?
2. Does the extant research direct teachers and administrators to employ a very different curriculum and technology to address the instructional demands of large, urban schools in contrast to small, rural or suburban schools?
3. Is there reliable evidence from the extant research about "scaling up" for large urban schools in ways that will lead to significant increases in students' academic achievement?

A reasonable answer to each of the questions is an unequivocal, "yes." After all, large urban schools are the gargantuans of the educational enterprise and are different in almost every way from small, rural schools. In fact, there is substantial persuasive literature on "scaling up" for the implementation of curriculum innovations in complex environments like LAUSD (Elmore, 1996). An organizing principle of this literature is that solving the problem of scaling up actually requires "scaling down," which suggests that large, urban districts must behave organizationally, administratively, and pedagogically like small districts. They must recognize that instructional variables within school jurisdictions that account for differences in learner performance are the same across districts, irrespective of size. We advance three principles to guide schools' approach to improving reading achievement:

1. Although school districts vary greatly in size and resources, the organizing principles and strategies for conceptualizing, designing, implementing, and sustaining instructional and

behavioral change are fundamentally the same for all individual schools, whether they are in Los Angeles or Eugene.

2. If effective curriculum programs, instructional and assessment strategies, staff development support, and organizational structures are to be sustained for extended periods of time, they must be anchored, implemented, monitored, and supported at the school-building level where the instructional complexities unfold daily.
3. Implementing instructional, behavioral, and organizational change at the building level is a necessary but insufficient condition for increasing and sustaining student performance. District-level support and commitment are imperative for long-term sustainability.

The fundamental sameness about reading improvement is that within every school's jurisdiction are alterable variables (Carroll, 1963) that when carefully understood, strategically managed, and faithfully implemented are capable of producing positive and sustainable results for the full range of learners. These alterable variables are constant across schools, irrespective of size or place.

Schoolwide reading improvement involves the integration of two complex systems: (a) the declarative knowledge of reading in an alphabetic writing system and (b) the procedural knowledge of how to organize and implement what we know about reading in a complex host environment known as school that is known as school that is comprised of people, practices, pedagogy, and policy. Figure 1 (see next page) details the elements of both systems and the need for strategic integration to assist schools in attaining the goal of all children reading by grade 3.

The graphic is simple by necessity and doesn't suggest the complexity of the process. Action plans for individual schools, however, are similar, regardless of school size, site, or socioeconomic status. In the following section, we (a) describe a set of tenets to guide schoolwide reading initiatives and (b) discuss a schoolwide model of reading achievement for translating research into practice. The model and its decision-making processes draw extensively on the work in reading assessment of Kaminski and Good (1996) and Shinn (1997). These researchers' procedures for identifying, grouping, problem solving, and performance monitoring are combined with Kame'enui and Simmons' (1998) components of contextual interventions to build an integrated and comprehensive intervention model. An earlier version of the model was presented in the OSSC Bulletin (1998, Volume 41, Number 3). This current iteration represents an evolution of guidelines and procedures based on lessons we've learned from our work with schools throughout the United States (e.g., Hawaii, Minnesota, California, and Texas) and from three years of systematic and sustained implementation in the Bethel School District of Eugene.

Schoolwide Beginning Reading Model: Tenets and Stages

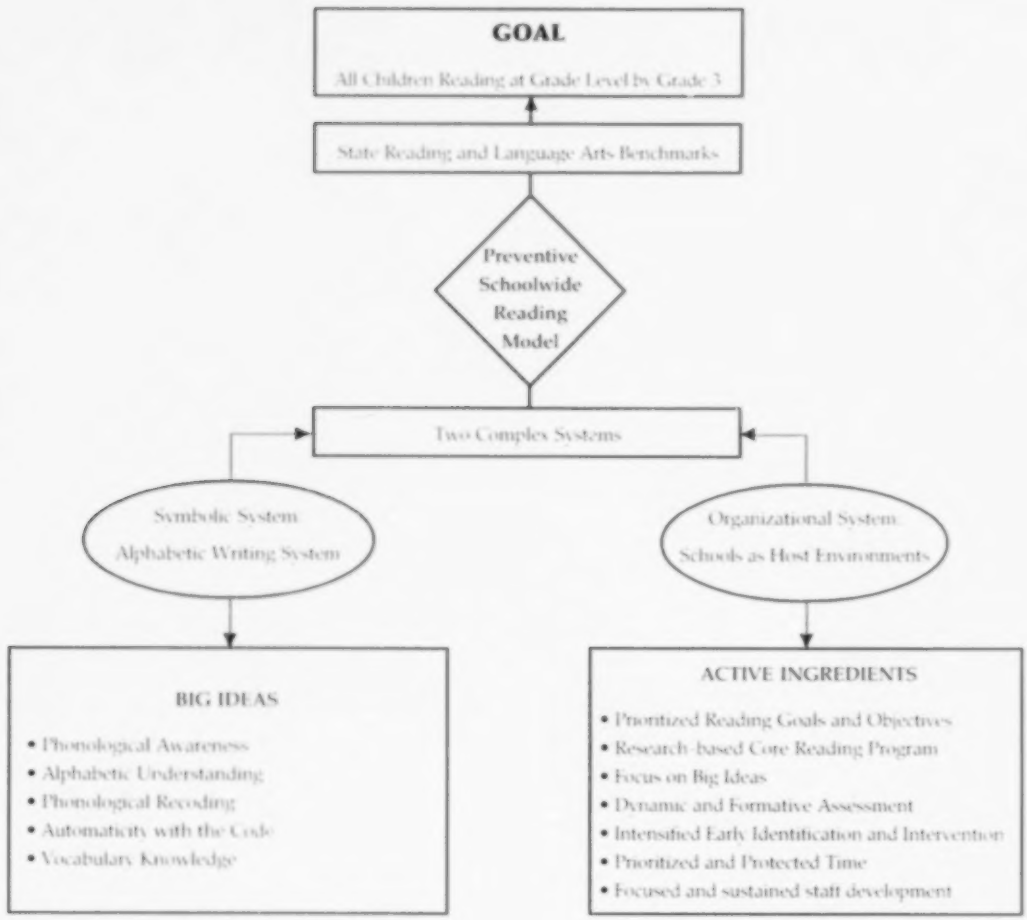
Our perspective is that the school must be the fundamental unit of change if significant and sustainable reading improvement is to occur. Our model of reading improvement adheres to eight research-based tenets.

TENETS OF THE SCHOOLWIDE READING MODEL

Schoolwide reading improvement:

1. addresses reading failure and reading success from a schoolwide systemic perspective;
2. embraces a prevention framework by intervening early and strategically during the critical window of instructional opportunity;
3. recognizes and responds to the multiple contexts of reading achievement and includes carefully articulated goals, research-based programs, dynamic assessment, adequate and protected instructional time, quality instructional delivery, differentiated instruction, and effective organization and grouping;
4. develops and promotes a comprehensive system of instruction based on a research-based core curriculum and enhancement programs;
5. anchors instruction and practices to the converging knowledge base of effective reading practice;
6. builds capacity in the school by using school-based teams to customize interventions to the host environment;
7. relies on and fosters the ability of the school principal to serve as the instructional leader; and
8. uses formative, dynamic indicators of student performance to identify need, plan instructional groups, and modify instruction.

Figure 1


GOAL
All Children Reading at Grade Level by Grade 3
State Reading and Language Arts Benchmarks
Preventive Schoolwide Reading Model
Two Complex Systems
Symbolic System
Alphabetic Writing System
Organizational System
Schools as Host Environments
BIG IDEAS
• Phonological Awareness
• Alphabetic Understanding
• Phonological Recoding
• Automaticity with the Code
• Vocabulary Knowledge
ACTIVE INGREDIENTS
• Prioritized Reading Goals and Objectives
• Research-based Core Reading Program
• Focus on Big Ideas
• Dynamic and Formative Assessment
• Intensified Early Identification and Intervention
• Prioritized and Protected Time
• Focused and sustained staff development

Collectively, these tenets characterize a philosophy of reading improvement that is proactive, intensive, and effective for the full range of learners in schools. Next, we delineate a set of actions and decisions schools must undertake as they work toward the goal of all children reading by grade 3.

The architectural blueprint of the model is framed by five successive stages (see Figure 2). Within each stage are two distinct levels (school and student) that operate concurrently. The premise of the two levels is that school-level decisions have consequences for individual students, for a schoolwide model that employs school-level procedures must also provide for needs of individual students.

STAGE I: CONDUCT SCHOOL AUDIT AND ASSESS STUDENT PERFORMANCE K-3 (*see Figure 3*)

Conduct School Audit

The goals of Stage I are twofold and operate concurrently at two levels — the school level and individual student level. The first goal for a school is to determine what is currently in place with respect to instructional priorities, assessment of reading, time allocated to reading instruction, instructional materials and programs, organizational strategies, and overall student performance. To obtain this information, schools conduct an internal audit using the *Planning and Evaluation Tool for Effective Schoolwide Reading Programs* (Kame'enui & Simmons, 1999). This tool captures both "process" and "product" features of the school's cur-

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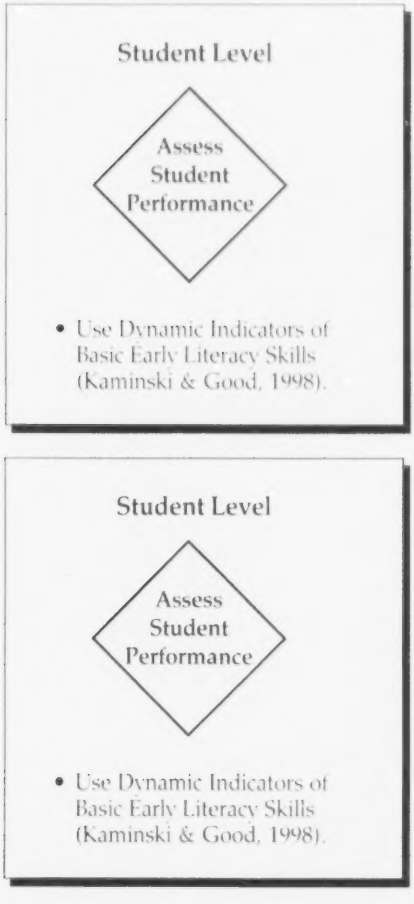
Figure 2

STAGE I Conduct School Audit and Assess Student Performance	STAGE II Analyze School and Student Performance	STAGE III Design Instructional Interventions	STAGE IV Set Goals and Monitor Progress Formatively	STAGE V Evaluate Intervention Efficacy and Adjust Instruction
School Level Conduct School Audit • Use Planning and Evaluation Tool (Kame'enui & Simmons, 1999).	**Identify Reading Priorities and Develop Action Plan** • Review Audit. • Identify strengths and areas of development based on audit summary scores. • Identify and develop three priorities. • Establish Action Plan.	**Design Core Instructional Interventions** • Specify the following: Goals Core curriculum program Time for reading Instructional grouping and scheduling Instructional implementation Progress-monitoring system	**Establish and Implement Progress-Monitoring System** • Identify valid and reliable dynamic indicators. • Establish absolute and relative goals. • Commit resources. • Determine schedule. • Interpret and communicate results.	**Evaluate School-Level Performance** • Evaluate effectiveness three times per year. • Examine components of interventions in Stage III. • Make instructional adjustments. • Determine whether and for whom to maintain or adjust intervention.
School Level Assess Student Performance • Use Dynamic Indicators of Basic Early Literacy Skills (Kaminski & Good, 1998).	**Analyze Individual Performance and Plan Instructional Groups** • Identify students who require: Benchmark Intervention Strategic Intervention Intensive Intervention	**Customize Intensive and Strategic Interventions** • Specify the following: -Goals -Core or specialized curriculum materials -Time for reading -Instructional grouping and scheduling -Instruction -Progress-monitoring system	**Customize Progress-Monitoring System for Intensive and Strategic Interventions** • Intensive: Monitor progress every two weeks. • Strategic: Monitor progress every month. • Benchmark: Monitor progress three times per year.	**Intensify Intervention** • Determine students who are and are not "learning enough." • Chart instructional profiles for students making little or no progress. • Adjust components of interventions in Stage III.

Figure 3

STAGE I

CONDUCT SCHOOL AUDIT AND
ASSESS STUDENT PERFORMANCE


Student Level
Assess Student Performance
• Use Dynamic Indicators of Basic Early Literacy Skills (Kaminski & Good, 1998).
Student Level
Assess Student Performance
• Use Dynamic Indicators of Basic Early Literacy Skills (Kaminski & Good, 1998).

rent commitments and investments in beginning reading from kindergarten through grade 3 (see Figure 4). An inventory of the process commitments at the school level allows K-3 representatives to work with the principal to take stock of the professional investments (e.g., communication processes, staff development resources and plans) the school has made in beginning reading. The process can be unifying and instructive as teachers and administrators work together to take inventory of their schools' reading disposition. The audit uses a 100-point scale divided across seven areas (e.g., goals and priorities, assessment) to quantify a school's current state of practice and the resulting data provides a first step in identifying areas of improvement.

Assess Student Performance

The second goal of Stage I is to identify children who may be at risk of reading disabilities or delay and determine the need for early intervention (Kaminski & Good, 1996). All children, kindergarten through grade 3, are screened on one-minute measures that correspond to the big ideas in beginning reading —phonological awareness, alphabetic understanding, and automaticity with the code (Simmons & Kame'enui, 1998). While the screening measures do not tell us everything about reading, they serve as valid and reliable indicators or predictors of skills highly associated with later reading achievement. These measures provide "vital signs of growth in basic skills comparable to the vital signs of health used by physicians" (Deno, 1992, p. 6). In addition, they provide fast and efficient indications of a student's reading well being on skills essential to success in the general education curriculum (Kaminski & Good, 1998).

Screening measures differ according to grade level and progress and reflect the increased complexity of reading over time, as illustrated in Figure 5 on page 12. For example, in kindergarten and first grade, Dynamic Indicators of Basic Early Literacy Skills (DIBELS) (Kaminski & Good, 1998) are used to identify children whose performance differs significantly from their same-age peers and who may need early intervention. DIBELS measures align with the big ideas in early reading and include (a) letter-naming fluency, (b) onset-recognition fluency, (c) phonemic-segmentation fluency, and (d) nonsense-word fluency. Once students are able to read words in connected text (approximately mid-first grade), measures of oral reading fluency from curriculum-based passages are used as indicators of reading achievement (Shinn, 1997). Oral-reading fluency measures are then used as primary indicators of reading progress through grade 5. Reliance on vital-sign indicators does not dismiss or discount the importance of other reading dimensions such as vocabulary and comprehension. Rather, one-minute, fluency-based measures allow educators to identify potential difficulties early and to assess a broader range of reading dimensions more strategically when indicated by individual student's performance on screening and progress monitoring measures. The purpose of assessment in Stage I is not to label, but rather to intervene and provide levels of intervention necessary to alter and increase early learning trajectories.

In Stage I, a centralized system for managing student-performance data is established and maintained at the school level to enable timely and informed decisions. This dynamic database and record-keeping system is the common feature of effective schools and is an

Figure 4

0	*1*	*2*
not in place	*partially in place*	*fully in place*

EVALUATION CRITERIA	DOCUMENTATION OF EVIDENCE
VI. **Administration/Organization/Communication:** Strong instructional leadership maintains a focus on high-quality instruction, organizes and allocates resources to support reading, and establishes mechanisms to communicate reading progress and practices.	
__ 1. Administrators are knowledgeable of state standards, priority reading skills and strategies, assessment measures and practices, and instructional programs and materials.	
__ 2. Administrators work with staff to create a coherent plan for reading instruction and institute practices to attain school reading goals.	
__ 3. Administrators maximize and protect instructional time and organize resources and personnel to support reading instruction, practice, and assessment.	
__ 4. Grade-level teams are established and supported to analyze reading performance and plan instruction.	
__ 5. Concurrent instruction (e.g., Title I, special education) is coordinated with and complementary to general education reading instruction.	
__ 6. A communication plan for reporting and sharing student performance with teachers, parents, and other stakeholders is in place.	

_____ /12 Total Points _____ %

PERCENT OF IMPLEMENTATION

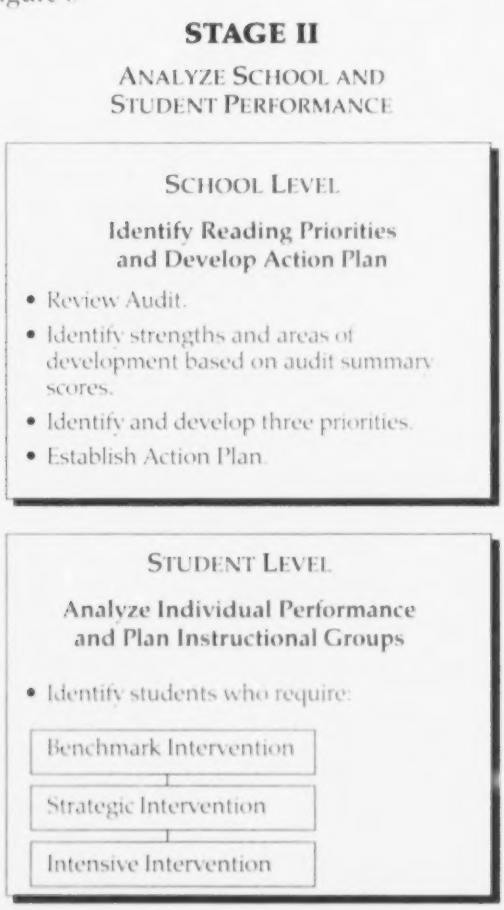
6=50% *10=80%* *12=100%*

Figure 5

SCHEDULE OF BIG IDEA INDICATORS BY GRADE

	FALL	WINTER	SPRING
Kindergarten			
Letter-Naming Fluency	♦	♦	♦
Onset Recognition	♦	♦	
Phonemic-Segmentation Fluency		♦	♦
Nonsense-Word Reading Fluency		♦	♦
First Grade			
Letter-Naming Fluency	♦		
Nonsense-Word Reading Fluency	♦	♦	♦
Oral-Reading Fluency		♦	♦
Second-Fifth Grades			
Oral-Reading Fluency	♦	♦	♦

Figure 6


STAGE II
ANALYZE SCHOOL AND STUDENT PERFORMANCE
SCHOOL LEVEL
Identify Reading Priorities and Develop Action Plan
• Review Audit.
• Identify strengths and areas of development based on audit summary scores.
• Identify and develop three priorities.
• Establish Action Plan.
STUDENT LEVEL
Analyze Individual Performance and Plan Instructional Groups
• Identify students who require:
Benchmark Intervention
Strategic Intervention
Intensive Intervention

essential feature of the model. Schoolwide data are collected three times per year; forwarded to the Institute for the Development of Educational Achievement (IDEA), College of Education, University of Oregon; analyzed; and reported back to schools within a week's time.

STAGE II: ANALYZE SCHOOL AND STUDENT PERFORMANCE (*see Figure 6*)

Identify Reading Priorities and Develop an Action Plan

In Stage II, schools review results of the schoolwide audit conducted in Stage I. Results of the audit inventory what is in place, what is partially in place, and what is not in place along a range of dimensions (e.g., reading goals and objectives, assessment tools and strategies, instructional programs). The audit provides information at three levels: (a) an overall score based on a total of one hundred points that indicates relative ranking toward a "gold" standard, (b) dimension scores (i.e., curriculum programs and instruction, professional development), and (c) individual item scores (e.g., Is there a commonly articulated and understood set of goals in reading for each grade?). Schools use audit data to identify strengths and areas of development, prioritize areas of improvement, and develop an action plan (see Figure 7).

Figure 7

PLANNING AND EVALUATION TOOL FOR EFFECTIVE SCHOOLWIDE READING PROGRAMS

PRIORITIZATION AND ACTION

Based on the previous listing of areas to improve, rank order three areas.
The areas may include one element or items from several different elements.

Priority #1	Action Plan	Who and When?
Priority #2	Action Plan	Who and When?
Priority #3	Action Plan	Who and When?

SUPPORT TEAM MEMBERS AND SCHEDULE

Identify the date, time, and place for the next schoolwide reading meeting.

Analyze Individual Performance and Plan Instructional Groups

In Stage II, schools also examine each learner's performance on critical reading skills to assess the magnitude of the problem. From this big-picture analysis, the scope and intensity of the intervention can be determined. Furthermore, schools can be better prepared to respond to children's needs proactively. Using normative information from DIBELS, each student's performance is analyzed to determine (a) each child's current level of performance and (b) other children who have similar performance profiles.

Student performance on DIBELS is compared to absolute performance expectations (i.e., where we would expect children to perform) and relative standards (i.e., where students are in relation to others in their school and district and individual student growth over time) to identify children at risk of reading disability or delay (see Figure 8). Performance expectations are derived from research-based criterion levels of performance (Hasbrouck & Tindal, 1992; Good et al., 2000), and students are identified as potentially at risk relative to their local performance norms and in comparison to research-based criteria.

Figure 8

DYNAMIC INDICATORS OF BASIC EARLY LITERACY SKILLS

and

ORAL-READING-FLUENCY MEASURES
BENCHMARK LEVELS AND GOALS

MEASURE	BENCHMARK GOAL
Onset-Recognition Fluency Measure (OnRF)	• 25-35 correct onsets per minute by winter of kindergarten.
Phonemic-Segmentation Fluency Measure (PSF)	• 35-45 correct phonemes per minute by spring of kindergarten.
Nonsense-Word Fluency Measure (NWF)	• 40-50 correct letter sounds per minute by winter of first grade.
Oral-Reading minute Fluency Measure (OFR)	• 40-60 words read correct per by end of first grade. • 90 words read correct per minute by end of second grade.

For example, a child entering first grade scoring less than ten segments per minute on the phonemic segmentation fluency measure may be at risk, as the target criterion for end-of-kindergarten to mid-first grade is 35-45 segments per minute. Likewise, a student exiting second grade reading forty words correct per minute would be identified for more intensive intervention and follow-up, as the end-of-year target for correct words per minute is ninety.

Teachers perform "instructional triage" on students by using a process developed by Shinn (1997) and elaborated by Kaminski and Good (1998), by assessing student performance on the critical reading skills using DIBELS, and by assimilating other information from teachers. Children who are at greatest risk are identified from those at less risk. To operationalize this process, we use the following criteria:

Students Benefiting from Benchmark Intervention

Benchmark interventions are those practices and programs provided in general education that position students to meet or exceed commonly agreed upon reading goals and priorities. The elements of benchmark intervention vary across schools, but the common factor is that the majority of students derive adequate benefit to pass school-, district-, and state-level assessments of reading. As a general rule, benchmark intervention should prepare eighty percent or more of students in a school to read at grade level. If more than twenty percent of students fail to reach benchmarks at designated intervals (see Figure 8), we strongly recommend that the "core" reading program and practices be evaluated. Students who attain benchmark performance on critical literacy skills are on track to attain later reading outcomes. Benchmark students are monitored three times a year in the fall, winter, and spring to evaluate growth toward common goals. If a

child's performance does not maintain adequate growth toward benchmark goals, appropriate interventions are provided.

Students in Need of Strategic Intervention

Students in strategic intervention need explicit, systematic, and timely intervention and monitoring. In general, strategic intervention is for students who need more than is typical of the general education curriculum and instruction. With appropriate core instruction, fifteen percent of students may need additional, strategic instructional support. Students in the strategic intervention group may exhibit mixed performance patterns; that is, they may perform well on one measure but low on another, or they may perform moderately below average on a range of measures. In some schools, students requiring strategic intervention may constitute a large number of students, while in other schools they are a small number. The goal of strategic intervention is to identify children potentially at risk and provide sufficient systematic instruction that their performance rapidly reaches and exceeds benchmark levels. Shinn (1997) recommends monthly monitoring on critical reading indicators to evaluate these students' performance.

Students in Need of Intensive Intervention

Intensive intervention is recommended for students who are significantly at risk based on their extremely low performance on one or more big idea performance indicators. The greater the number of measures and the lower the performance across measures, the greater the risk. The most defining characteristic of children in need of intensive instructional intervention is continued low rates of progress even when provided with strategic intervention. With effective benchmark and strategic instruction in place, it is estimated that approximately five percent of students would need intensive intervention (Torgesen, 2000).

Much like children with serious medical conditions, children in need of intensive intervention in reading are in acute need of early identification, the most effective interventions available, and frequent monitoring to ensure their reading performance does not remain seriously low. Educators must intervene with a sense of urgency and with the most effective tools and strategies available. Moreover, the intensive interventions should be short-term and temporary, rather like an intensive care unit in a hospital.

Once children's performance profiles are analyzed, children are grouped in small homogeneous groups according to reading performance. The purpose of grouping is to ensure that children are given ample opportunities to receive instruction and increased opportunities to respond at their instructional level. As a rule, the number of students who receive intensive instruction should be smaller than either the strategic or benchmark groups. Groups should be dynamic rather than static. Strategic and frequent monitoring of performance are critical for adjusting groups in response to instruction and assessment.

As a rule, you may anticipate that twenty percent of students in the fall would require strategic or intensive intervention. Identifying twenty percent of children in the fall for intensive intervention may constitute "overidentification"; however, the consequences of providing extra intervention is considered far less risky than a wait-and-see position that withholds opportunity for additional instruction until students are seriously discrepant from their peers. In addition to the twenty percent criterion, we employ research-based guidelines on selected measures that predict success. For instance, a first-grade student who can identify forty or more letter-sounds correctly on the nonsense-word fluency measure in the winter is highly likely to read forty correct words per minute on the oral-reading fluency measure (Good, et. al., 2000) in the Spring of grade 1. The correlational nature of the early indicator measures allows schools and teachers to make high-probability predictions of success and risk. For example, a mid-year first grader who identifies only nine correct letter sounds on the nonsense-word fluency measure is at serious risk of not attaining the end-of-year first grade oral-reading fluency benchmark of forty to sixty correct words per minute and would warrant more instructional support than students performing in the benchmark range.

STAGE III: DESIGN INSTRUCTIONAL INTERVENTIONS (*see Figure 9*)

In Stage III, we address what is arguably the most critical and complex component of the schoolwide model — intervention. Of foremost importance to the model is the instructional fit of the intervention within the host environment or school; therefore, schools invest serious and sustained energy at this stage. Stage III decisions focus on (a) specifying and implementing a core instructional intervention and (b) customizing strategic and intensive interventions for students who are not benefiting adequately from the core curriculum or are at high risk of reading difficulty.

Figure 9

STAGE III

DESIGN INSTRUCTIONAL INTERVENTIONS

SCHOOL LEVEL

Design Core Instructional Interventions

- Specify the following:

Goals
Core curriculum program
Time for reading
Instructional grouping and scheduling
Instructional Implementation
Progress-monitoring system

STUDENT LEVEL

Customize Intensive and Strategic Interventions

Goals
Core or specialized curriculum materials
Time for reading
Instructional grouping and scheduling
Instruction
Progress-monitoring system

Designing a Core Instructional Intervention

Two principles guide decisions in Stage III: (a) intervention is bigger than program alone and (b) identification and implementation of a research-based core intervention provides the highest probability of success in the host environment. A common misperception is that once a commercial program is identified and adopted, the reading intervention is determined. Commercial programs constitute a critical component of a schoolwide model, but as documented in the Stage III figure, core intervention encompasses far more and includes goals, time for reading, instructional grouping and scheduling, instructional delivery and implementation, and progress monitoring. The first step in intervention design specifies grade-level reading goals. For example, what is the school's expectation for all first grade students? What levels of proficiency on which skills are common expectations of all grade 1 teachers? Goals specification is a critical dimension of the Schoolwide Inventory conducted in Stage I, and that information should be used to guide intervention design. Once goals are specified and the magnitude of the school's discrepancy is evaluated in relation to the goals, school teams design the optimal school-level intervention that fits their host environment. In Stage III the school's needs, resources, and philosophies interact with the scientific knowledge base in beginning reading to determine "what should reading instruction look like in our school?" Critical decisions such as time allocations for reading, instructional grouping procedures, who delivers instruction, where it is delivered, and so on are considered and specified. Schools must invest considerable time designing this intervention action plan. In essence, the outcome of Stage III is an intervention map that specifies what core instruction looks like for students in kindergarten, grade 1, grade 2 and beyond.

Central to this decision is the selection of the research-based core program that fits the host environment. From the outset, schools are encouraged to review commercial programs that have solid, scientific evidence and that produce strong and positive results for children when implemented faithfully. A short list of research-based commercial programs is currently available (AFT, 1998); however, the new generation of programs holds great promise because of their attention to research-based findings documented in NICHD research, summarized and synthesized by the National Research Council (1998) and the National Reading Panel (2000), and mandated by populous states such as California and Texas. From the short list, we encourage schools to pilot programs for a year, review scope and sequences, and compare programs within the list to identify the one that aligns most closely with the needs of students, the instructional priorities, and the school environment.

The development of interventions is facilitated by site-based coordinators (e.g., a teacher or administrator serving as a building coordinator) with collaborative grade-level intervention teams. In this process, grade-level teams work from a framework of research-based practices (e.g., specific curriculum, supplemental practices) and alterable variables (e.g., time, size of groups, concentration of low performers) to customize interventions.

Throughout the intervention process, collaborative intervention teams construct or customize the intervention from a menu of validated options. It is this "fit" within the school that further distinguishes this model from more traditional intervention models.

Customize Intensive and Strategic Interventions

With the core intervention specified, the next set of decisions involves how to customize interventions for students who are not benefiting adequately from that core intervention or for children who enter with high levels of risk on the big idea indicators. Questions such as "Can the core commercial program be used, but in smaller groups?" "Will the student benefit from an extra period of instruction, but with a different program?" "Would preteaching critical lesson components result in adequate progress?" These questions relate to customization. In some cases, students may require a specialized and intensified program that focuses prominently on the big ideas of early reading. In other cases, customization may involve adding a second reading period. The degree and kind of customization must be determined at the school level and governed by school resources of time, programs, and personnel.

STAGE IV: SET GOALS AND MONITOR PROGRESS FORMATIVELY (*see Figure 10*)

The efficacy of the schoolwide model hinges largely on the ability of a school to document whether students are learning enough (Carnine, 1997). A school's ability to document and act upon individual student performance dynamically, reliably, and formatively distinguishes it from the majority of schools in our educational system. Though norm-referenced, commercially published measures of reading achievement document a learner's performance at a given point in time, the purpose of these measures was never to inform instruction for individual learners. Moreover, these measures were never intended to monitor progress frequently and formatively over time.

A key feature of this model is the essential linkage between assessment and instruction. While this feature may represent an overused cliché in the research literature, it is predicated on a simple but vital proposition: We have valid, reliable, and efficient (one minute to administer) measures that when given early in a child's beginning literacy experience serve as powerful predictors of later reading success or risk. Moreover, when these measures are administered frequently, they can document student progress or lack thereof. For any school seriously interested in serving all students (which requires serving each and every student), this is a powerful proposition with practical implications.

Though integrating assessment and instruction is not a novel concept and is indeed a signature of effective special education (Deno, 1992; Fuchs & Fuchs, 1994), what is innovative and effective about this process is the timely, efficient, and strategic fit of the measures (i.e., what to assess), the targets of reading improvement (i.e., what to teach to what criterion levels of performance), and the intervention that has a high probability of improving reading (i.e., how to teach and how often to review). This confluence of performance indicators and instructional interventions positions a school to (a) identify children early (e.g., kindergarten) who are at serious risk of reading failure, (b) intervene strategically, (c) modify instruction responsively in accord with learner performance, (d) assess student performance efficiently (i.e., the measures are one-minute, fluency-based indicators) and frequently, (e) link the assessment (i.e., they measure skills and experiences critical to beginning reading) to key instructional targets, and (f) establish an organizational capacity at the school level that is essential to sustaining effective practices for the long run.

Figure 10

STAGE IV

SET GOALS AND MONITOR PROGRESS FORMATIVELY

SCHOOL LEVEL

Establish and Implement Progress-Monitoring System

- Identify valid and reliable dynamic indicators.
- Establish absolute and relative goals.
- Commit resources.
- Determine schedule.
- Interpret and communicate results.

STUDENT LEVEL

Customize Progress-Monitoring System for Intensive and Strategic Interventions

- Intensive: Monitor progress every two weeks.
- Strategic: Monitor progress every month.
- Benchmark: Monitor progress three times per year.

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Establish and Implement a Progress-Monitoring System

An effective and efficient progress-monitoring system consists of five critical factors: (a) reliable and valid indicators with alternate forms that can be administered formatively and frequently, (b) established absolute and relative learning targets to evaluate whether the rate and slope of learning is adequate, (c) resources and personnel to prepare assessment materials, administer and score measures, and enter data, (d) a confirmed and commonly agreed upon schedule for collecting data, and (e) an efficient process for analyzing, summarizing, and reporting data to constituencies. In beginning reading, we have reliable and valid indicators (i.e., dynamic indicators of basic early literacy skills and oral reading fluency) and a reliable knowledge base to determine expected performance for early literacy success (Fuchs, Fuchs, 1994; Kaminski & Good, 1996; Hasbrouck & Tindal, 1992; Markell & Deno, 1997). These levels of expected performance are critical as we develop goals for children whose early reading trajectories are less than adequate.

At the present time, Good, Kame'enui, and Simmons are building and refining a website through which schools can enter DIBELS and oral-reading fluency data and receive reports of student performance at the classroom, school, and district levels immediately. Reports are prepared at the district, school, class, and individual student level. Information from these reports will include the percentage of students at benchmark, strategic, and intensive intervention levels and class profiles delineating the individual performance of each learner across measures.

Customize Progress-Monitoring System for Intensive and Strategic Interventions

All students are assessed quarterly on critical performance indicators to determine their progress toward long-term goals. Students in strategic interventions are monitored monthly, and students in intensive interventions are monitored more frequently (e.g., every one-two weeks). Learning targets are established, and each learner's performance on target goals is documented. The following graphic depicts one kindergarten student's monthly progress on the Phonemic-Segmentation Fluency measure. The student whose performance is reflected in Figure 11 was identified at the beginning of the year as needing of intensive intervention based on his performance on onset-recognition and letter-naming fluency measures. As indicated in the graph, he met the end-of-kindergarten goal of 35-45 phonemes per minute in March and continued progress through April. Through monthly monitoring, teachers can evaluate individual children's progress precisely and adjust instruction, if needed as indicated.

Figure 11

KINDERGARTEN EXAMPLE OF PROGRESS MONITORING ON THE PHONEMIC SEGMENTATION FLUENCY MEASURE

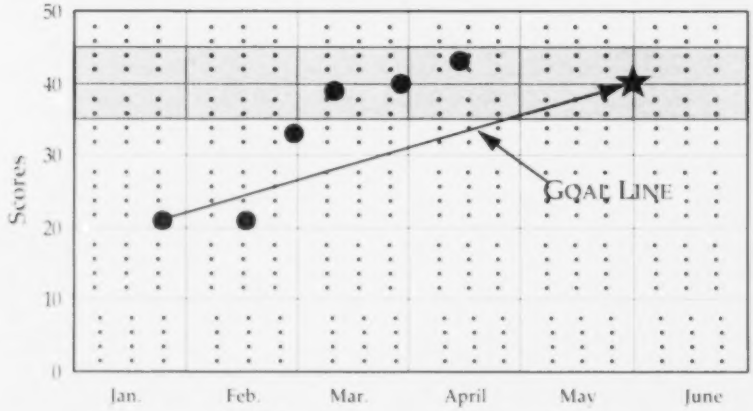


Figure 12

STAGE V

EVALUATE INTERVENTION EFFICACY AND ADJUST INSTRUCTION

SCHOOL LEVEL

Evaluate School-Level Performance

- Evaluate effectiveness three times per year.
- Examine components of interventions in Stage III.
- Make instructional adjustments.
- Determine whether and for whom to maintain or adjust intervention.

STUDENT LEVEL

Intensify Intervention

- Determine students who are and are not "learning enough."
- Chart instructional profiles for students making little or no progress.
- Adjust components of interventions in Stage III.

STAGE V: EVALUATE INTERVENTION EFFICACY AND ADJUST INSTRUCTION (*see Figure 12*)

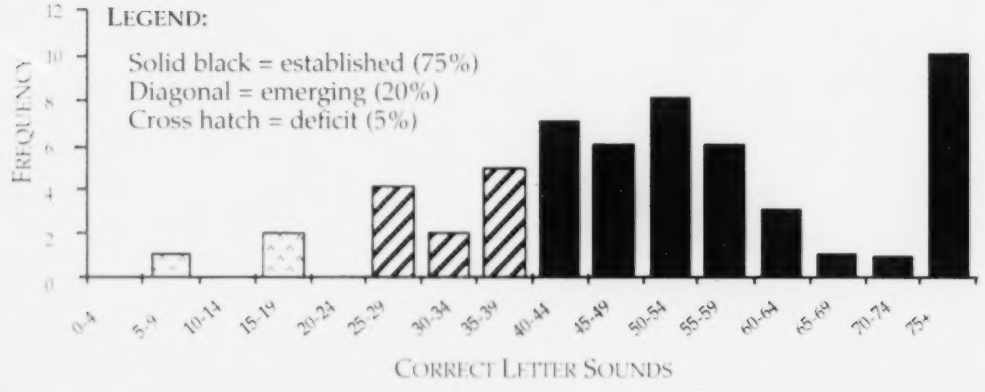
In the final stage of the model, the effects of intervention conducted in Stages I-IV are evaluated directly and interventions intensified as indicated by student performance. In this stage, schools address the following questions: Are the instructional interventions working for the full range of learners? Are students learning enough? What instructional adjustments must be made to enhance beginning reading performance?

Evaluate School-Level Performance

The performance of all students is evaluated three times a year on big idea indicators, and findings are reviewed at the school, classroom, and individual level. The following histogram displays the January performance of fifty-four first-grade students in one school on the nonsense-word fluency measure (see Figure 13). The target goal for first graders in January is 40-60 letter sounds per minute. Criteria for evaluating the magnitude of the problem are specified, and the proportion of students in each category is identified. As indicated, seventy-five percent of students in the school are identified as having established letter-sound knowledge as demonstrated by their ability to recognize forty or more correct letter sounds per minute. Another twenty percent evidence emerging letter-sound knowledge (i.e., 20-39 letter sounds per minute). Five per cent, or three children in this school, identified fewer than twenty correct letter sounds in one minute and are considered to have marked difficulty with the alphabetic principle. The relatively few children who have difficulty with letter-sound fluency was significantly different from the September 1999 assessment.

Figure 13

DISTRIBUTION OF NONSENSE-WORD FLUENCY



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PERCENT OF STUDENTS IN EACH LEVEL BASED ON NONSENSE-WORD FLUENCY (N=387)

	AT RISK – DEFICIT (0-19)	EMERGING (20-39)	ESTABLISHED (40-60)
September 1999	47%	36%	17%
January 2000	5%	20%	75%

The table above compares the performance of first-grade students on the nonsense-word fluency measure at two points in the year: September 1999 and January 2000. Comparative performance data indicate that students in the school have made significant progress. Analysis reveals substantial progress for each intervention group (intensive and strategic, yet twenty-five percent of grade 1 students failed to reach fluent levels in using knowledge of letter sounds to read nonsense words by January, and these students required more strategic or intensive intervention.

To determine how to intensify intervention, the first focus at the school level is to assess whether the instructional interventions planned in Stage III were implemented as designed. Faculty must evaluate dimensions of the core intervention to identify the source of the difficulty. First-order questions include: (1) Was the intervention implemented as planned or prescribed? (2) Did students receive the amount of intervention specified for the time allocated? (3) Were there high rates of absence for many learners? (4) Did the size of instructional groups permit adequate opportunities for students to respond? (5) Was progress monitored frequently to evaluate learning? If review of the core dimensions of intervention indicates one or more deviations from what was planned, procedures should be put in place to increase fidelity of the planned intervention. If analysis reveals that all intervention components were implemented as planned, faculty must review the list of alterable variables to determine what and how much to intensify.

If performance trends are positive and adequate for all but a few children, then large-scale intervention adjustment is not warranted. Only if many students are failing to progress adequately is full review and adjustment of the core intervention components necessary.

Intensify Intervention

In Stage V, each classroom teacher reviews performance data quarterly to determine if specific children have an inadequate rate of reading growth to attain targeted proficiency goals on critical measures of early reading. From this information, teachers assess each child's performance on multiple measures to determine if the student's performance is deficit, emerging, or established. Instructional recommendations are then based on the number of essential skills on which the student is experiencing difficulty and the magnitude of their educational need. The following winter report for a first-grade class illustrates a mid-first-grade goal of 35-45 phonemes per minute on the phonemic segmentation measures and 40-60 letter sounds per minute on the nonsense-word fluency measure. In this class, nine children are benefiting from benchmark instruction, four children require strategic intervention, and four children are recommended for intensive intervention.

In addition to evaluating absolute performance (i.e., where a student scores at one point in time), it is important to evaluate growth. For example, although Suzy and Mandy both are recommended for intensive intervention, Suzy made enormous growth on phonemic segmentation from fall (0) to winter (58) and on nonsense words (from 0 to 39). Mandy, however, grew only to 19 from 10 on phonemic segmentation and to 15 from 4 on nonsense words. This documentation of growth is essential to effective instructional adjustments. Oral-reading fluency data are provided, yet in mid-year, these performance levels are not used to specify more intensive levels of intervention, as many first graders are not yet fluent readers in mid-first grade. The range of oral-reading fluency scores (4 to 74 correct words per minute) is significant in these data, as is the fact that several children are already reading more than forty correct words per minute.

A first-order question for students identified in need of intensive and strategic intervention is, "Have these children been enrolled in the school and receiving instruction?" or are there obvious attendance and enrollment issues that shed light on their low progress or performance levels? Answers to these questions may explain the differential progress rates of children such as Suzy and Mandy. If low performance cannot be explained by attendance factors, teachers then review and intensify levels of intervention to increase the probability that students will attain adequate levels of proficiency. Common adjustments used to intensify intervention are (a) increasing the amount of time by providing double doses of reading instruction, (b) reducing the size of the instructional group, (c) using a more specialized and explicit instructional program, and (d) monitoring progress more frequently. A table of alterable components and specific adjustments follows.

FIRST GRADE WINTER DIBELS Benchmark Teacher Report

TEACHER: Mrs. Smith
GRADE: 1

DISTRICT: Oregon School District
SCHOOL: Appleton Elementary

	Letter Naming	Phonemic Segmentation			Nonsense Word Fluency *			Oral Reading Fluency		Instructional Recommendations Based Primarily on Nonsense Word Fluency
Student	Fall	Fall	Winter	Status	Fall	Winter	Status	Winter	Status	
Abdi	22	16	50	Established	33	38	Emerging	11	Emerging	Strategic instruction
John	31	13	62	Established	42	66	Established	42	Established	Benchmark instruction
Suzy	9	0	56	Established	0	29	Emerging	4	Non-Reader	Intensive instruction
Eric	42	0	23	Emerging	29	37	Emerging	18	Emerging	Strategic instruction
George	25	11		Not Tested		Absent	Absent	Absent		
Gillian	44	28	56	Established	47	52	Established	23	Emerging	Benchmark instruction
Beth	37	25	49	Established	27	56	Established	46	Established	Benchmark instruction
Joe	16	1	47	Established	32	50	Established	7	Non-Reader	Strategic instruction
Mandy	20	10	39	Emerging	4	15	Deficit	7	Non-Reader	Intensive instruction
Sarah	55	55	47	Established	84	70	Established	36	Emerging	Benchmark instruction
Fred	46	22	42	Established	45	62	Established	74	Established	Benchmark instruction
Neil	39	31	40	Established	35	53	Established	27	Emerging	Benchmark instruction
Stewart	40	14	40	Established	13	14	Deficit	13	Emerging	Intensive instruction
Deborah	24	17	24	Emerging	39	17	Deficit	13	Emerging	Intensive instruction
Edward	50	48	50	Established	49	48	Established	49	Established	Benchmark instruction
Kobe	72	67	72	Established	40	57	Established	43	Established	Benchmark instruction
Josh	63	31	63	Established	50	31	Emerging	50	Established	Strategic instruction
Dixie	36	24	50	Established	35	49	Established	27	Emerging	Benchmark instruction

ALTERABLE COMPONENTS

Opportunities to Learn	Program Efficacy	Program Implementation	Grouping for Instruction	Coordination of Instruction
Development plan to increase attendance	Preteach components of core program	Model lesson delivery	Check to see students are appropriately placed	Clarify instructional priorities
Ensure instruction is provided daily	Use materials that are extensions of the core	Monitor implementation frequently	Reduce number of students in group	Establish concurrent reading periods/sessions
Increase number of opportunities for learner to respond	Supplement program with appropriate materials	Provide coaching and ongoing support	Provide individual instruction	Provide complementary reading instruction across reading periods
Increase teacher-directed instruction	Replace current core program	Provide additional staff development	Change instructor.	Establish a communication system across instructors
Add another instructional period (double dose)	Implement specially designed program			

SUMMARY OF SCHOOLWIDE MODEL

Schoolwide reading improvement involves the integration of two complex systems: (a) the knowledge base of reading in an alphabetic writing system and (b) the design and implementation of the knowledge base in a complex host environment known as schools that is comprised of people, practices, pedagogy, and policy.

We advocate that the processes and procedures required to effect and sustain reading improvement are fundamentally the same whether the school is in Los Angeles, California or Eugene, Oregon. The translation of the knowledge base of beginning reading from the research literature to practice in schools is built on and nurtured by a common set of components operationalized in the five stages of the schoolwide reading model. A primary objective of this model is to prevent reading difficulty and disability and to intervene strategically to provide instruction as early and effectively as possible. For children at risk of serious reading difficulty or identified with reading disabilities, the model allows schools to determine:

(a) the magnitude of the problem at a school level,

(b) who will require intensive intervention,

(c) essential dimensions of intervention and their contextual fit,

(d) the amount of growth necessary to change early reading trajectories,

(e) the effectiveness of the intervention,

(f) the staff development needs of teachers to deliver the interventions, and

(g) whether individual children are learning enough (Carnine, 1997).

In the following pages, we describe the application of this model in the Bethel School District, which has the goal that all students establish positive reading trajectories to launch a lifetime of successful reading.

Implementation of the Schoolwide Model: A Profile and Lessons Learned

TAKING STOCK AND TAKING ACTION

The Bethel School District (BSD) is a small, suburban school district in western Oregon with a total enrollment of 5,031 students and a population base that grew during the 1999-2000 school year at a rate of five percent. Like many school districts, student demographics of Bethel are interesting and varied. For example, forty-two percent of students in Bethel are from households characterized as low income, and many students live in low income housing or transient motels. In addition, fifteen percent of students in Bethel schools qualify for special education services, and eighteen percent of students qualify for Title I.

In recent years, Bethel experienced a significant increase in the percentage of students identified with special needs. For example, the referral rates for special education in grade 2 for one school increased from thirteen percent in 1994-95 to seventeen percent in 1996-97, and the referral rates in grade 2 for another school increased from five percent in 1994-95 to eight percent in 1997-98.

Several trends gave Bethel School District cause to consider its current practices and investments in beginning reading. These trends included:

(a) increasing special education referrals,

(b) a highly mobile and transient student population,

(c) the State of Oregon's commitment to performance standards,

(d) the growing awareness of research literature on beginning reading and the importance of strategic intervention in the early years of schooling,

(e) the significant variability between schools on curriculum-based reading norms for students receiving Title I and special education services, and

(f) the lack of coherence across schools in reading goals and curricular focus.

These trends and indicators persuaded the Bethel School District to implement the schoolwide beginning reading model in all six of its elementary schools.

STAGE I: CONDUCT SCHOOL AUDIT AND ASSESS STUDENT PERFORMANCE

Conduct School Audit, Districtwide

One of the first steps Bethel took during the 1997-1998 school year was to reestablish and reconvene a "District Reading Committee." This long-standing committee was comprised of K-3 teacher representatives from each of the six schools, as well as building administrators and Title I and special education teachers. One of the primary functions of the committee was to serve as a forum to discuss a range of issues that included (a) district reading goals and objectives, (b) a districtwide reading assessment plan, (c) reading curriculum pro-

grams, strategies, and interventions, and (d) home-school linkages and communication.

In the Spring of 1998, committee members, directed by their respective school principals, initiated the schoolwide audit in each of the six elementary schools. Schools submitted their individual audits, and after examining and discussing priorities for each, the six schools reached consensus, and Bethel School District established a common set of reading priorities:

DISTRICT READING PRIORITIES

1. Establish a districtwide set of reading priorities and goals.
2. Establish and put in place a common formative assessment system, district wide.
3. Maintain each school's individual decision-making authority for adopting instructional programs and materials.

Despite lean economic times, the district pledged to provide the administrative support necessary to build the capacity to implement and sustain a comprehensive districtwide reading model. A cumulative model was employed whereby a new grade was introduced to the model each subsequent year. The focus for the first year (1998-99) implementation of the schoolwide model was kindergarten, and in the second year (1999-2000), the model included grade 1. In subsequent years (2000-2002), the implementation will expand to encompass the other primary grades (2 and 3). A half-time reading coordinator was employed to organize and facilitate reading improvement efforts in the six schools for the 1998-99 academic year.

Assess Student Performance

In the Fall of 1998, all kindergarten teachers, educational assistants, and school administrators received training in administering and interpreting the DIBELS. In mid-November, all kindergarten students were assessed with two measures recommended for early identification (National Research Council, 1998; Torgesen, 1998): (a) a test of letter names and (b) a measure of phonemic awareness. Specifically, the onset-recognition fluency and letter-naming fluency measures of DIBELS were administered. Each school determined their data collection process. Some schools established assessment teams of three to five individuals who collected data for all kindergarten classrooms. In other schools, respective classroom teachers collected their own data.

STAGE II: ANALYZE SCHOOL AND STUDENT PERFORMANCE

Identify Reading Priorities and Develop Action Plan

Districtwide goals provided a common framework for schools. Each school and its respective faculty developed an action plan focused on three critical features: (a) assessment (fall identification and progress monitoring), (b) core program and materials, grouping, scheduling, and differentiating instruction, and (c) intervention evaluation and instruction adjustment. In the action plans, schools specified who, when, what, where, and how each major activity would transpire in their respective schools. Schools continue to use and refine these action plans as they progress and new grades are introduced to the model.

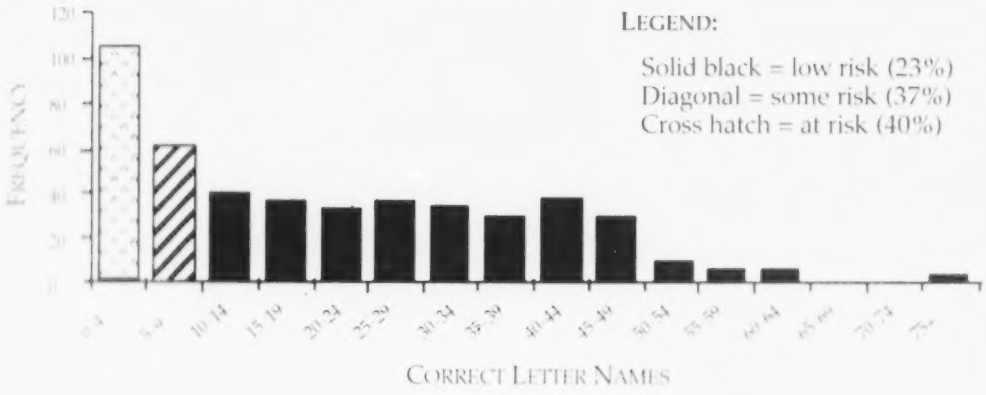
Analyze Individual Performance and Plan Instructional Groups

To manage and organize school- and district-level data effectively and efficiently, Bethel established a computer-based data management system in which school-designated staff entered data the week after data collection. Reports specified individual student scores, rank ordered students within class according to performance on DIBELS measures, and designated the level of intervention intensity indicated by the students' performance (e.g., intensive, strategic, and benchmark). District- and school-level histograms were also produced to profile the magnitude of the need.

As illustrated in the histogram below, November 1998 data indicated that 105 of the 383 kindergarten students assessed could identify four or fewer letter names in one minute (See Figure 14). Ninety of the 383 students could identify fewer than ten first sounds of pictures on the Onset-Recognition Fluency measure. Data from both measures were shared with teachers, and teachers either confirmed or questioned the representativeness of the findings. Students whose performance was considered atypical were reassessed to corroborate the need for strategic or intensive intervention. Across the district, approximately twenty-three percent of kindergarten students were identified in need of intensive intervention in November 1998.

Figure 14

DISTRIBUTION OF LETTER-NAMING FLUENCY



STAGE III: DESIGN INSTRUCTIONAL INTERVENTIONS

Design Core Instructional Intervention

Kindergarten and Title I teachers and administrators worked together to customize instructional interventions that both targeted the full range of learners and were anchored to the unique host environment of each school. First, school teams reviewed several phonological awareness/reading programs to serve as the core curriculum for all students and supplemental programs to augment instruction for strategic and intensive students. All kindergarten teachers were given training and guidance on the review and selection of core and supplemental reading programs. Kindergarten programs reviewed included Open Court (2000), Reading Mastery (1998), Phonemic Awareness for Young Children (1997), Ladders to Literacy (1998), and Phonological Awareness Training for Reading (1994). Core and supplemental programs were chosen by school teams on the basis of strong research support and the contextual fit with the needs of each school.

Next, schools determined the minimum amount of time to set aside for teacher-directed reading instruction during the half-day kindergarten sessions. School teams decided thirty to forty-five minutes of direct reading instruction each day was essential to meet the needs of all kindergarten students within the district. Some schools concluded that intensive students would require an additional period (i.e., "double dose") of reading instruction daily. Teachers and administrators also discussed options for the grouping of students and scheduling reading instruction. Depending on instructional preferences of teachers and availability of additional staff support at each school, teams considered grouping possibilities and discussed options for the delivery of instruction to intensive and strategic students utilizing classroom, Title I, and special education teachers and instructional assistants. In general, intensive intervention groups were no larger than five students. The inclusion of administrators on each school team permitted conversations about ways in which schoolwide scheduling could help facilitate these various grouping and service delivery alternatives. Finally, individual teachers made decisions about additional curricular materials and instructional practices they would use to enhance the reading instruction in their classrooms.

STAGE IV: SET GOALS AND MONITOR PROGRESS FORMATIVELY

Establish and Implement Progress-Monitoring System

Bethel used research-based performance objectives to establish benchmark goals for the phonological awareness and alphabetic understanding measures administered in kindergarten. The goals for kindergarten students were to identify 25-35 onsets per minute on the Onset-Recognition Fluency measure by winter and 35-45 segments per minute on the Phonemic-Segmentation Fluency measure by spring. Because phonological segmentation is such a strong predictor of reading success in first grade, the goal was for all students to

have established phonological segmentation skills by the end of kindergarten. Additionally, the Nonsense-Word Fluency measure that assesses alphabetic understanding was also administered throughout kindergarten. The mid-grade 1 goal is 40-50 letter sounds per minute. From these learning targets, teachers set short-term instructional goals. School teams assessed all students in the fall, winter, and spring. School teams from Bethel made a commitment to meet frequently to monitor the effectiveness of their kindergarten interventions and to make instructional adjustments. Schools varied in scheduling and frequency of meetings and were guided by time and staffing considerations. Teams worked collaboratively to alter instructional variables based on student data. At meetings, decisions were made about the allocation of instructional time, ways to regroup students, the use of supplemental materials, assessment schedules, short-term objectives, and instructional focus. Teams customized interventions for intensive and strategic students in a way that was dynamic and integrally linked to student performance.

Customize Progress-Monitoring System for Intensive and Strategic Interventions

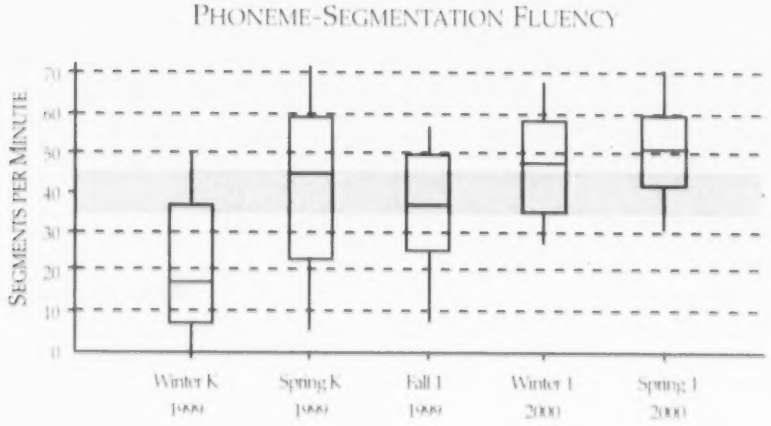
A minimum expectation is that all students are evaluated three times per year, but for students whose learning stakes are extremely high and who need intensive treatment, we recommend more frequent monitoring. Some schools in the Bethel School District monitor intensive students every other week, while others assess these students once a month. By establishing clear goals of expected performance and instituting an assessment schedule based on degree of student risk, schools created a feedback loop that allowed for formative evaluation and modification of instruction.

STAGE V: EVALUATE INTERVENTION EFFICACY AND ADJUST INSTRUCTION

Preliminary effects of Bethel School District's reading initiative are revealed in the following boxplots (see Figures 15). Boxplots depict the range of learner performance within the district with the top of each box representing the 80th percentile, the line in the middle of the box the 50th percentile, and the bottom of the box the 20th percentile. The lines extending from the top and bottom of the box reflect the 95th and 5th percentiles, respectively. The horizontal band represents the target zone of performance (i.e., 35-45 phonemes per minute by Spring of kindergarten). When reviewing the boxplots, it is important to note (a) the initial performance points of the 20th, 50th, and 80th percentile learners and (b) the relative growth of all learners over time.

Figure 15

PHONOLOGICAL AWARENESS PROGRESS FOR 1998-99 KINDERGARTEN COHORT*



*Includes only children present at all five assessments.

The box plot depicts the performance of all kindergarten students (N = 259) in the school district at all five measurement points. Results indicate the performance levels in Winter of kindergarten, 1999 and the relative growth in student performance across five points in time from Winter 1999 to Spring 2000. In Winter 1999, the majority of kindergarten children were significantly below the desired, end-of-kindergarten criterion performance level of 35-45 segments per minute. Students at the 50th percentile were producing less than twenty phoneme segments per minute. However, students at the 80th percentile were performing at the desired criterion level. Low performance profiles in Winter of kindergarten are not unexpected or unusual. Phonemic segmentation is a skill typically introduced and mastered in the second half of kindergarten and the first half of first grade.

The districtwide results for Bethel based on the winter assessment indicated the scope of the problem in kindergarten and emphasized the need for developing comprehensive reading interventions at each school. School teams then examined the results of individual student performance and determined instructional groupings. By comparing student results on the different kindergarten measures to performance expectations (i.e., benchmarks) known to predict future reading success, teachers were able to identify students as benchmark, strategic, or intensive (Kaminski & Good, 1998). For example, individual student performance on the DIBELS Phonemic-Segmentation Fluency measure indicated that in Winter 1999, twenty percent of kindergartners should be considered benchmark students, forty-eight percent strategic students, and thirty-two percent intensive students. Identifying groupings based on student performance set the stage for school teams to plan interventions to address the needs of all students.

Results of the Bethel implementation in kindergarten and first grade indicate that students' phonemic awareness skills increased substantially from Winter to Spring 1999 (see Figure 13). In Spring 1999, only seven percent of kindergarten students had phonemic awareness skills at a level requiring intensive intervention, as opposed to thirty-two percent in Winter.

What is noteworthy is the amount of growth over time and the level of achievement in Winter 2000. Almost all students, with the exception of those in the 5th percentile, had met the criterion performance goal of 35-45 segments per minute. This represents an important and substantial growth in students' phonological awareness, because this measure suggests students understand the sounds of the language and are primed to negotiate the alphabetic principle. Spring 2000 data indicated that zero percent of students scored in the deficit range on phonemic segmentation, providing further evidence of success for the full range of learners. Similar growth and performance levels were observed on separate measures of nonsense word fluency for the full complement of kindergarten students. In Spring 2000, the number of first graders in the Bethel School District who could identify fewer than twenty correct letter sounds per minute was only one percent. A critical criterion measure for end-of-year first grade is the ability to read unpracticed grade-level text fluently. Spring 2000 data indicate that for the 396 students in B.S.D., fifty-seven percent read forty or more words correct per minute (cwpm) and thirty-six percent read 10-39 cwpm. Of greatest concern is the six percent of children who read less than ten cwpm. These students will continue to be a focus at the district and school level. The most encouraging result emerged from the oral-reading fluency findings: the number of nonreaders in the district reduced significantly from fifteen percent in 1999 to six percent in 2000. The Spring 2000 students are the first group to have been involved in the districtwide reading improvement project for the full two years.

The slopes and levels of performance provide clear and compelling evidence that first-grade students showed progress and proficiency on a range of measures. The nature of the evidence, however, precludes a causal conclusion. That is, would the students have achieved these levels of proficiency in the absence of schoolwide reading improvement efforts? Because this was a district-level effort, no control group was available to compare performance results, and we rely on student attainment of research-based levels of proficiency to evaluate outcomes. In the absence of a control group, we cannot draw conclusions about relative growth; however, we can conclude that in an absolute sense, students made notable growth.

One additional point deserves explanation. Examination of student performance on the boxplot reveals regression from Spring 1999 to Fall 1999 for the 80th percentile and 50th percentile students. Most provocative is the finding that the 20th percentile students "held their own" or increased during summer's "hiatus" from learning. The Bethel School District used spring performance data to identify children who might profit from summer school, invited approximately fifty children to attend a four-week summer school program, and provided small-group intensive intervention in early reading skills. The benefits of this intensive intervention program seem to be revealed in the boxplots, and the value of summer school is reinforced.

Lessons Learned

As we near the end of the second year of implementation, we are humbled by the commitment of the schools and their respective faculty, administrators, parents, and students. The learning curve for all of us was steep, and we are all in quite a different place from two years ago. Schools have learned to (a) collect data efficiently, (b) allocate resources to create extra reading periods for students, (c) evaluate and select materials and programs that have a high probability of success, (d) communicate and interpret data with each other and parents, and (e) evaluate whether students are learning enough. Each school has held to the district tenet of a common assessment system while maintaining its own individual difference as a host environment in program selection and implementation. Each school has established the capacity to identify children at risk, design effective programs, and evaluate program efficacy. The magnitude of accomplishments, however, masks the complexity of the task and the difficulty of the process. Reports such as this often highlight the successes and unintentionally fail to disclose the potential pitfalls. As we embark on Year 03, permit us to offer the following lessons learned to schools contemplating a schoolwide effort.

LESSONS LEARNED: SCHOOL BY SCHOOL

1. **FOCUS, FOCUS, FOCUS.** The commitment to improve children's reading performance requires relentless focus. Schools are faced with continuous and unforgiving distractions. Teaching reading must be established and maintained as a top priority. Such a priority requires endless focus.

2. **EDUCATE ALL CERTIFIED TEACHERS AND EDUCATIONAL ASSISTANTS IN MEASUREMENT PROCEDURES AND DATA INTERPRETATION.** Even if all teachers do not collect data, they must all have a thorough understanding of the measures, their purpose, and what growth looks like.

3. **MONITOR STUDENT PROGRESS.** Over time, continuous monitoring of student progress ignites and shapes a professional culture committed to continuous improvement of student performance. While many teachers were initially reluctant to first use DIBELS, in short order, they insist, "Show me the data!"

4. **IDENTIFY AND ALLOCATE TIME FOR A SITE-BASED READING COORDINATOR TO FACILITATE THE SCHOOLWIDE EFFORT.** If schoolwide reading achievement is to take hold and be sustained, there must be an individual at the school who understands the big picture and the nuances of the process and has time authorized to facilitate schoolwide efforts. In most cases, this person is not the school administrator.

5. **SCHEDULE AND ALLOCATE TIME FOR GRADE-LEVEL AND SCHOOL TEAMS TO REVIEW PROGRESS AND DESIGN INSTRUCTIONAL ADJUSTMENTS.** If the schoolwide model is to be successful, it cannot be something that happens just after school. Staff development schedules and professional development must be planned in advance and protected.

6. **CREATE AND NURTURE A COMMUNITY OF ADMINISTRATORS AS INSTRUCTIONAL LEADERS.** Principal involvement and investment is an essential common denominator of effective schoolwide efforts. To quote a fellow administrator, "If I am not involved, the process goes sideways." In the Bethel Reading Project, all administrators attend and participate in all staff development and feedback sessions. Moreover, they advance reading improvement through their actions, commitment, and resource allocations.

7. **HOLD INSTRUCTIONAL TIME SACRED.** There are 720 days from kindergarten through grade 3 to ensure that children are readers. Reading instruction time must be allocated generously and protected tenaciously.

8. **COMMUNICATE, COMMUNICATE, COMMUNICATE.** Establish and implement methods of sharing information, materials, and progress across classrooms, grades, and schools.

9. **WORK WITH COMMITTED TEACHERS AND ADMINISTRATORS.** If student success is important, then working with highly committed teachers and administrators is necessary.

10. **CELEBRATE STUDENT SUCCESS.** All too often, the pace of schools and the demands on time preclude recognition and celebration. There will be many successes in this process. Do not lose sight of student performance gains and what they represent, an investment in the future.

Conclusions

The importance of reading well being in America's children has never been more pronounced and the accountability of schools never more publicized. As conceptualized in this monograph, the task at hand is to translate the science of reading into the system of schools in ways that take hold and sustain over time—in ways that ensure that all students read at grade level by grade 3. At issue is the process of how to make this goal a reality. In this monograph, we presented the second generation of a schoolwide reading improvement model, a revised model built upon what we've learned by paying attention to science and schools. We trust we have accurately captured what both have taught us.

The enormity of the task of changing practices in America's schools evokes a range of responses from "This too shall pass" to "How do we begin?" For guidance in this effort, we draw upon the teachings of writer Anne Lamott. In her national best seller, she recounted the agony of her brother, who was immobilized in the face of the daunting task of learning the state birds of all fifty states in the union. Anne's father directed her brother as best he knew how, "Bird by bird, buddy. Just take it bird by bird" (p. 19).

How do we improve reading achievement of America's children? School by school, we claim. We advance in this monograph a model to help guide schools' selection, implementation, and sustainability of practices and programs that fit their unique host environments and hold to the standard of research-based practice. The goal that all children read by grade 3 is ambitious, indeed. Yet for administrators and teachers of schools across the nation and for the well being of our children, it is non-negotiable.

Author Note

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